CONTENTS OF VOLUME 28

NUMBER 1

Acknowledgement of Reviewers 2002	1	
D.S. Scott	15	The trouble with *micro*states
Ø. Ulleberg	21	Modeling of advanced alkaline electrolyzers: a system simulation approach
N. Nagai, M. Takeuchi, T. Kimura and T. Oka	35	Existence of optimum space between electrodes on hydrogen production by water electrolysis
Y. Bessekhouad, M. Trari and J.P. Doumerc	43	$CuMnO_2$, a novel hydrogen photoevolution catalyst
S.K. Saxena	49	Hydrogen production by chemically reacting species
X.H. Hao, L.J. Guo, X. Mao, X.M. Zhang and X.J. Chen	55	Hydrogen production from glucose used as a model compound of biomass gasified in supercritical water
M.M. Ciravegna, J.L. Gervasoni and J.P. Abriata	65	Characterization of the Zr–H system using an effective jellium model
M.J. Maresca, S. Perez de Heluane, J.L. Gervasoni and H.R. Bertorello	69	Evaluation of the stability of free dendrites. Applications to water and succinonitrile
J. Ma, Y. Su, Y. Zhou and Z. Zhang	77	Simulation and prediction on the performance of a vehicle's hydrogen engine
Z. Ma, S.M. Jeter and S.I. Abdel-Khalik	85	Modeling the transport processes within multichannel molten carbonate fuel cells
K.J. Kim and M. Shahinpoor	99	Effective diffusivity of nanoscale ion–water clusters within ion-exchange membranes determined by a novel mechano-electrical technique
S. Tosti, A. Adrover, A. Basile, V. Camilli, G. Chiappetta and V. Violante	105	Characterization of thin wall Pd–Ag rolled membranes
H. Pan, Y. Liu, M. Gao, Y. Zhu, Y. Lei and Q. Wang	113	A study on the effect of annealing treatment on the electrochemical properties of $La_{0.67}Mg_{0.33}Ni_{2.5}Co_{0.5}$ alloy electrodes
H. Chen, J.M. Wang, T. Pan, H.M. Xiao, J.Q. Zhang and C.N. Cao	119	Effects of high-energy ball milling (HEBM) on the structure and electrochemical performance of nickel hydroxide
R.V. Mendes	125	Quantum collision states for positive charges in an octahedral cage

Short communication

J. O'M Bockris	131	On hydrogen futures: toward a sustainable energy system
S. Dunn	135	Author's reply
Announcements	137	Hydrogen Energy Progress XIII
	138	Hypothesis 5
	139	ICHMS'2003
	140	Fuel Cell 2003
	141	Solar-Hydrogen Energy
	142	EnerEnv'2003
	143	Market challenges of Fuel Cell Commercialisation
	145	International Association for Hydrogen Energy

NUMBER 2

D.S. Scott	147	The arrow of time
Z. Wang, W. Wang and G. Lu	151	Studies on the active species and on dispersion of Cu in Cu/SiO_2 and $Cu/Zn/SiO_2$ for hydrogen production via methanol partial oxidation
A.E. Lutz, R.W. Bradshaw, J.O. Keller and D.E. Witmer	159	Thermodynamic analysis of hydrogen production by steam reforming
J. Panek, A. Serek, A. Budniok, E. Rówinski and E. Łagiewka	169	Ni + Ti composite layers as cathode materials for electrolytic hydrogen evolution
R.M. Santilli	177	The novel magnecular species of hydrogen and oxygen with increased specific weight and energy content
S. Hodoshima, H. Arai and Y. Saito	197	Liquid-film-type catalytic decalin dehydrogenoaromatization for long-term storage and long-distance transportation of hydrogen
V.C.Y. Kong, D.W. Kirk, F.R. Foulkes and J.T. Hinatsu	205	Development of hydrogen storage for fuel cell generators II: utilization of calcium hydride and lithium hydride
H.S. Lee, K.S. Jeong and B.S. Oh	215	An experimental study of controlling strategies and drive forces for hydrogen fuel cell hybrid vehicles

L. TÜRKER 223 AM1 treatment of $(Li + nH_2)_{n=0-5}@C_{60}$ systems

M.R. SWAIN, P. FILOSO, E.S. GRILLIOT and M.N. SWAIN 229 Hydrogen leakage into simple geometric enclosures

Short communication

V. LIPOVETSKY 249 A new method for producing gaseous hydrogen: general principles

Book review

E. TRELL 251 Foundations of hadronic chemistry with applications to new clean energies and fuels

Announcements 255 Hydrogen Energy Progress

256 The 6th International Conference

257 IEEES-2003

258 Process intensification/Miniaturisation

259 International Association for Hydrogen Energy

NUMBER 3

D.S. SCOTT 261 Leitmotiv of living planets

L. BARRETO, A. MAKIHIRA and K. RIAHI 267 The hydrogen economy in the 21st century: a sustainable development scenario

M.J. WALTERS, K.A. ASSIONGBON, D.R. MARR, B.T. SHEPARDSON and D. ROY 285 Enhancement of electrocatalytic hydrogen evolution on tantalum by submonolayer electrodeposition of silver

T. OZAKI, Y. ZHANG, M. KOMAKI and C. NISHIMURA 297 Preparation of palladium-coated V and V–15Ni membranes for hydrogen purification by electroless plating technique

V.M. SKRIPNYUK and M. RON 303 Hydrogen desorption kinetics in intermetallic compounds C2, $C5_1$ and $C5_2$ with Laves phase structure

Y. ZHU, H. PAN, M. GAO, J. MA, Y. LEI and Q. WANG 311 Electrochemical studies on the Ti–Zr–V–Mn–Cr–Ni hydrogen storage electrode alloys

C.-Y. SEO, S.-J. CHOI, J. CHOI, C.-N. PARK, P.S. LEE and J.-Y. LEE 317 Effect of Ti and Zr additions on the characteristics of AB_5-type hydride electrode for Ni–MH secondary battery

Y. CHEN, C.A.C. SEQUEIRA, C. CHEN, X. WANG and Q. WANG 329 Metal hydride beds and hydrogen supply tanks as minitype PEMFC hydrogen sources

K. Otsuka, C. Yamada, T. Kaburagi and S. Takenaka	335	Hydrogen storage and production by redox of iron oxide for polymer electrolyte fuel cell vehicles
R.C. Dante, J.L. Escamilla, V. Madrigal, T. Theuss, J. de Dios Calderón, O. Solorza and R. Rivera	343	Fractional factorial design of experiments for PEM fuel cell performances improvement
A. Kazim and T.N. Veziroglu	349	Role of PEM fuel cells in diversifying electricity production in the United Arab Emirates
W. Seifritz	357	Letter to Editor
R.L. Mills	359	Authors response
Announcements	361	Hydrogen Energy Progress
	362	Hyforum 2003
	363	Hypothesis V
	364	Fuel Cell 2003
	365	International Association for Hydrogen Energy

NUMBER 4

V.M. Skripnyuk	367	Obituary: Moshe Ron
D.S. Scott	369	Exergy
V. Lipovetsky	377	Gaseous hydrogen production by water dissociation method
H. Koku, İnci Eroğlu, U. Gündüz, M. Yücel and L. Türker	381	Kinetics of biological hydrogen production by the photosynthetic bacterium *Rhodobacter sphaeroides* O.U.001
Y. Zhu, H. Pan, M. Gao, Y. Liu and Q. Wang	389	Influence of annealing treatment on Laves phase compound containing a V-based BCC solid solution phase—Part I: Crystal structures
Y. Zhu, H. Pan, M. Gao, Y. Liu and Q. Wang	395	Influence of annealing treatment on Laves phase compound containing a V-based BCC solid solution phase—Part II: Electrochemical properties
M.Y. Song	403	Hydriding kinetics of a mechanically alloyed mixture Mg–10wt% Ni

C. Wu, Y. Chen, F. Li, D. Tang, C. Zhou and M. Tu	409	Differential thermo-analysis (DTA) method in strip casting AB_5-type hydrogen storage alloys
V. Azhazha, A. Grib, G. Khadzhay, B. Merisov and A. Pugachov	415	Influence of hydrogen on electrical resistivity of $Ti_{66}Ni_{20}Cu_{10}Si_4$ amorphous alloy
K. Abraham, M.P. Maiya and S.S. Murthy	419	Analysis of a metal hydride cold storage module
U.A. Rajendra Prasad, M.P. Maiya and S.S. Murthy	429	Parametric studies on a heat operated metal hydride based water pumping system
T. Ohta	437	On the molecular kinetics of acoustic cavitation and the nuclear emission
A.R. Choudhuri and S.R. Gollahalli	445	Characteristics of hydrogen–hydrocarbon composite fuel turbulent jet flames
D. Mignard, M. Sahibzada, J.M. Duthie and H.W. Whittington	455	Methanol synthesis from flue-gas CO_2 and renewable electricity: a feasibility study
Announcements	465	Olympic Hydrogen Announcement
	466	Hyforum 2003
	471	International Association for Hydrogen Energy

NUMBER 5

D.S. Scott	473	Links and lies
C.-J. Winter	477	On the HYway—sustainable assets in Germany's energy state's portfolio
J. Martinez-Frias, A.-Q. Pham and S.M. Aceves	483	A natural gas-assisted steam electrolyzer for high-efficiency production of hydrogen
R. Sime, J. Kuehni, L. D'Souza, E. Elizondo and S. Biollaz	491	The redox process for producing hydrogen from woody biomass
G.Y. Wang, Y.H. Xu, H.G. Pan and Q.D. Wang	499	Effect of substitution of chromium for manganese on structure discharge characteristics of Ti-Zr-V-Mn-Ni-type muti-phase hydrogen storage electrode alloys
G.-M. Cai, C.-P. Chen, Y. Chen, L.-X. Chen and Q.-D. Wang	509	Hydriding–dehydriding properties of crystalline and amorphous $La_{1.8}Ca_{0.2}Mg_{16}Ni$ alloy
A.R. Sánchez, H.-P. Klein and M. Groll	515	Expanded graphite as heat transfer matrix in metal hydride beds

Y. ASAKUMA, S. MIYAUCHI, T. YAMAMOTO, H. AOKI and T. MIURA 529 Numerical analysis of absorbing and desorbing mechanism for the metal hydride by homogenization method

F. ASKRI, A. JEMNI and S.B. NASRALLAH 537 Study of two-dimensional and dynamic heat and mass transfer in a metal–hydrogen reactor

W. IWASAKI 559 Magnetic refrigeration technology for an international clean energy network using hydrogen energy (WE-NET)

G.A. KARIM 569 Hydrogen as a spark ignition engine fuel

Announcements

579 Olympic Hydrogen Announcement

580 Hyforum 2003

585 Solar Hydrogen Energy

586 3rd International Conference on AST

587 EnerEnv'2003

588 Hypothesis V

589 Fuel Cell 2003

590 ICHMS'2003

591 Journal of Green Energy

592 ICAST 2003

593 International Association for Hydrogen Energy

NUMBER 6

Guest editorial

P.J. SEBASTIÁN 595 Mexican participation in IEA program on production, storage and utilization of hydrogen

M. SUGANTHA, P.A. RAMAKRISHNAN, A.M. HERMANN, C.P. WARMSINGH and D.S. GINLEY 597 Nanostructured MnO_2 for Li batteries

C.C. ELAM, C.E.G. PADRÓ, G. SANDROCK, A. LUZZI, P. LINDBLAD and E.F. HAGEN 601 Realizing the hydrogen future: the International Energy Agency's efforts to advance hydrogen energy technologies

J.-N. HAN, G.-G. PARK, Y.-G. YOON, T.-H. YANG, W.-Y. LEE and C.-S. KIM 609 A new evaluation method of anode/cathode used for polymer electrolyte membrane fuel cell

E.L. Miller, R.E. Rocheleau and X.M. Deng	615	Design considerations for a hybrid amorphous silicon/photoelectrochemical multijunction cell for hydrogen production
J. Moreira, A.L. Ocampo, P.J. Sebástian, M.A. Smit, M.D. Salazar, P. del Angel, J.A. Montoya, R. Pérez and L. Martínez	625	Influence of the hydrophobic material content in the gas diffusion electrodes on the performance of a PEM fuel cell
N.R. Mathews, P.J. Sebastian, X. Mathew and V. Agarwal	629	Photoelectrochemical characterization of porous Si
M. Geng and D.O. Northwood	633	Development of advanced rechargeable Ni/MH and Ni/Zn batteries
J. García-Serrano and U. Pal	637	Synthesis and characterization of Au nanoparticles in Al_2O_3 matrix
J. Pantoja, J. Moreira, P.J. Sebastián, X. Mathew and R. Castillo	641	Photoelectrochemical characterization of CdTe in Nafion electrolyte
G.-G. Park, T.-H. Yang, Y.-G. Yoon, W.-Y. Lee and C.-S. Kim	645	Pore size effect of the DMFC catalyst supported on porous materials
J. Ye, Z. Zou and A. Matsushita	651	A novel series of water splitting photocatalysts NiM_2O_6 (M = Nb, Ta) active under visible light
Y.-G. Yoon, G.-G. Park, T.-H. Yang, J.-N. Han, W.-Y. Lee and C.-S. Kim	657	Effect of pore structure of catalyst layer in a PEMFC on its performance
Z. Zou, J. Ye and H. Arakawa	663	Photocatalytic water splitting into H_2 and/or O_2 under UV and visible light irradiation with a semiconductor photocatalyst
	671	Solar Hydrogen Energy
	672	ICAST 2003
	673	HTM-2004
	674	ICHMS'2003
	675	'dubrovnik2003'
	677	PLM2003'
	678	NESE'03
	679	Journal of Green Energy
	680	Hyforum 2003
	681	IAHE

NUMBER 7

Editorial

K.-A. ADAMSON and G. ERDMANN	683	Market challenges of fuel cell commercialisation
G. ERDMANN	685	Future economics of the fuel cell housing market
A. BAUEN, D. HART and A. CHASE	695	Fuel cells for distributed generation in developing countries—an analysis
A. LOKURLU, T. GRUBE, B. HÖHLEIN and D. STOLTEN	703	Fuel cells for mobile and stationary applications—cost analysis for combined heat and power stations on the basis of fuel cells
P. DORAN, S. ROBESON, D. WRIGHT and J. CRAVEN	713	Finance and the fuel cell industry: a review of the current financing climate
L. SCHLECHT	717	Competition and alliances in fuel cell power train development
A.A. EVERS	725	Go to where the market is! Challenges and opportunities to bring fuel cells to the international market
J. LINSSEN, TH. GRUBE, B. HOEHLEIN and M. WALBECK	735	Full fuel cycles and market potentials of future passenger car propulsion systems
M.W. MELAINA	743	Initiating hydrogen infrastructures: preliminary analysis of a sufficient number of initial hydrogen stations in the US
C. TSO and S.-Y. CHANG	757	A viable niche market—fuel cell scooters in Taiwan
R. STEINBERGER-WILCKENS	763	Not cost minimisation but added value maximisation
K.-A. ADAMSON	771	An examination of consumer demand in the secondary niche market for fuel cell vehicles in Europe
Announcements	781	Solar Hydrogen Energy
	782	ICAST 2003
	783	Hyforum 2003
	784	HTM-2004
	785	IAHE

NUMBER 8

J. PROVENZANO	787	Obituary Robert M. Zweig
D.S. SCOTT	789	What should we blame?
P. KRUGER, J. BLAKELEY and J. LEAVER	795	Potential in New Zealand for use of hydrogen as a transportation fuel
R. GUO, L.-X. CHEN, Y.-Q. LEI, B. LIAO, T. YING and Q.-D. WANG	803	The effect of Ni content on the phase structures and electrochemical properties of $V_{2.1}TiNi_x$ ($x = 0.1$–0.9) hydrogen storage alloys
M.-Y. SONG, L. FOURNES and B. DARRIET	809	Study of $Mg_2Ni_{1-x}Fe_x$ alloys by Mössbauer resonance
R. TANG, L. LIU, Y. LIU and G. YU	815	Study on the microstructure and the electrochemical properties of $Ml_{0.7}Mg_{0.2}Ni_{2.8}Co_{0.6}$ hydrogen storage alloy
A.J. MAELAND	821	Approaches to increasing gravimetric hydrogen storage capacities of solid hydrogen storage materials
R.L. MILLS and P. RAY	825	A comprehensive study of spectra of the bound–free hyperfine levels of novel hydride ion $H^-(1/2)$, hydrogen, nitrogen, and air
H.-M. YEH	873	Improvement in recovery of deuterium from water–isotopes mixture in inclined thermal-diffusion columns
A. BORRUTO, F. PALMA and M. IAVARONE	881	Hydrogen–steel interaction: relationship between variations of mechanical properties of AISI 304 steel and hydrogen content
S.H. CHAN, H.K. HO and Y. TIAN	889	Multi-level modeling of SOFC–gas turbine hybrid system
J.W. HEFFEL	901	NO_x emission and performance data for a hydrogen fueled internal combustion engine at 1500 rpm using exhaust gas recirculation
Announcements	909	Solar Hydrogen Energy
	910	ICAST 2003
	911	'dubrovnik2003'
	912	ICHMS'2003
	913	Process intensification/Miniaturisation
	914	HTM-2004
	915	IAHE

NUMBER 9

D.S. Scott	917	The skinny on efficiency
G. Milczarek, A. Kasuya, S. Mamykin, T. Arai, K. Shinoda and K. Tohji	919	Optimization of a two-compartment photoelectrochemical cell for solar hydrogen production
J.M. Vidueira, A. Contreras and T.N. Veziroglu	927	PV autonomous installation to produce hydrogen via electrolysis, and its use in FC buses
W. Iwasaki	939	A consideration of the economic efficiency of hydrogen production from biomass
M. Levent, D.J. Gunn and M.A. El-Bousiffi	945	Production of hydrogen-rich gases from steam reforming of methane in an automatic catalytic microreactor
Y.-h. Xu, G.-r. He and X.-l. Wang	961	Hydrogen evolution reaction on the AB_5 metal hydride electrode
C.-Y. Seo, S.-J. Choi, J. Choi, C.-N. Park and J.-Y. Lee	967	Effect of vanadium content on electrochemical properties of la-based AB_5-type metal hydride electrodes
S.K. Zhang, K.Y. Shu, Y.Q. Lei, G.L. Lü and Q.D. Wang	977	The effect of solidification rate on the microstructure and electrochemical properties of Co-free $Ml(NiMnAlFe)_5$ alloys
Z. Dehouche, J. Goyette, T.K. Bose and R. Schulz	983	Moisture effect on hydrogen storage properties of nanostructured MgH_2–V–Ti composite
Y. Kojima and T. Haga	989	Recycling process of sodium metaborate to sodium borohydride
A. Juan, C. Pistonesi, A.J. García and G. Brizuela	995	The electronic structure and bonding of a H–H pair in the vicinity of a BCC Fe bulk vacancy
D.D. Afonichev and M.A. Murzinova	1005	Indicator of the process of cold fusion
T. Ohta	1011	Criteria for nuclear emission by bubble implosion
Y.K. Vijay, N.K. Acharya, S. Wate and D.K. Avasthi	1015	Nanofilter for hydrogen purification
S.V. Puzach	1019	Some features of formation of local combustible hydrogen–air mixtures during continuous release of hydrogen in a room
Announcements	1027	Hyforum 2003
	1028	Solar Hydrogen Energy
	1029	IAHE

NUMBER 10

D.S. SCOTT	1031	What will we gain?
I. RUSU and J.-M. CORMIER	1039	Study of a rotarc plasma reactor stability by means of electric discharge frequency analysis
X.E. VERYKIOS	1045	Catalytic dry reforming of natural gas for the production of chemicals and hydrogen
C.M. KINOSHITA and S.Q. TURN	1065	Production of hydrogen from bio-oil using CaO as a CO_2 sorbent
C.W. FORSBERG	1073	Hydrogen, nuclear energy, and the advanced high-temperature reactor
A.A. GÜRTEN, K. KAYAKIRILMAZ, B. YAZICI and M. ERBIL	1083	The primary study on the effects of primer alcohols on the hydrogen evolution reaction on silver electrode
P.R. MISHRA, P.K. SHUKLA, A.K. SINGH and O.N. SRIVASTAVA	1089	Investigation and optimization of nanostructured TiO_2 photoelectrode in regard to hydrogen production through photoelectrochemical process
D. HUA, Y. HANXI, A. XINPING and C. CHUANSIN	1095	Hydrogen production from catalytic hydrolysis of sodium borohydride solution using nickel boride catalyst
K. SHU, S. ZHANG, Y. LEI, G. LÜ and Q. WANG	1101	Study on structure and electrochemical performance of melt-spun non-stoichiometry alloys $Ml(NiCoMnTi)_{5+X}$
A. LÓPEZ-SUÁREZ, J. RICKARDS and R. TREJO-LUNA	1107	Analysis of hydrogen absorption by Ti and Ti–6Al–4V using the ERDA technique
L. TÜRKER	1115	Hydrogen storage behavior of C_{116} system —AM1 treatment
N. TAKEICHI, H. SENOH, T. YOKOTA, H. TSURUTA, K. HAMADA, H.T. TAKESHITA, H. TANAKA, T. KIYOBAYASHI, T. TAKANO and N. KURIYAMA	1121	"Hybrid hydrogen storage vessel", a novel high-pressure hydrogen storage vessel combined with hydrogen storage material
R.W. SCHEFER	1131	Hydrogen enrichment for improved lean flame stability
M.S. KUMAR, A. RAMESH and B. NAGALINGAM	1143	Use of hydrogen to enhance the performance of a vegetable oil fuelled compression ignition engine
Book review		
G. LANDVOGT	1155	The grand unified theory of classical quantum mechanics

Announcements

1157 The HIPT-Competition

1158 Solar Hydrogen Energy

1159 IAHE

NUMBER 11

D.S. SCOTT 1161 From steam engines to symphonies

Y. YAMADA, N. MATSUKI, T. OHMORI, H. MAMETSUKA, M. KONDO, A. MATSUDA and E. SUZUKI 1167 One chip photovoltaic water electrolysis device

J.D. TAYLOR, C.M. HERDMAN, B.C. WU, K. WALLY and S.F. RICE 1171 Hydrogen production in a compact supercritical water reformer

H.Y. KIM 1179 A low cost production of hydrogen from carbonaceous wastes

M. KOGAN and A. KOGAN 1187 Production of hydrogen and carbon by solar thermal methane splitting. I. The unseeded reactor

M.S. EL-DEAB and M.M. SALEH 1199 Electrocatalytic production of hydrogen on reticulated vitreous carbon

Q. HAN, K. LIU, J. CHEN and X. WEI 1207 A study on the electrodeposited Ni–S alloys as hydrogen evolution reaction cathodes

G. KARDAŞ, B. YAZICI and M. ERBIL 1213 Effect of some primary alcohols on hydrogen yield on platinum cathode in chloride solution

H. PAN, Y. LIU, M. GAO, Y. ZHU and Y. LEI 1219 The structural and electrochemical properties of $La_{0.7}Mg_{0.3}(Ni_{0.85}Co_{0.15})_x$ ($x = 3.0$–5.0) hydrogen storage alloys

T. OZAKI, Y. ZHANG, M. KOMAKI and C. NISHIMURA 1229 Hydrogen permeation characteristics of V–Ni–Al alloys

D.S. DOS SANTOS, M. BOUOUDINA and D. FRUCHART 1237 Structural and hydrogenation properties of an 80 wt% $TiCr_{1.1}V_{0.9}$–20 wt% $LaNi_5$ composite material

C.J. STEPHANSON and G.P. FLANAGAN 1243 Synthesis of a novel anionic hydride organosiloxane presenting biochemical properties

X. LI, H. ZHU, C. XU, Z. MAO and D. WU 1251 Measuring hydrogen storage capacity of carbon nanotubes by tangent-mass method

S. HODOSHIMA, H. ARAI, S. TAKAIWA and Y. SAITO 1255 Catalytic decalin dehydrogenation/naphthalene hydrogenation pair as a hydrogen source for fuel-cell vehicle

L. WANG, A. HUSAR, T. ZHOU and H. LIU	1263	A parametric study of PEM fuel cell performances
T. OHTA	1273	Processes and key properties of pool materials for "bubble fusion"
A. ADROVER, M. GIONA, L. CAPOBIANCO, P. TRIPODI and V. VIOLANTE	1279	Steady-state concentration profiles of hydrogen in tubular metallic membranes
J.W. HEFFEL	1285	NO_x emission reduction in a hydrogen fueled internal combustion engine at 3000 rpm using exhaust gas recirculation
W. SEIFRITZ	1293	An endogenous technological learning formulation for fossil fuel resources
Announcements	1299	The HIPT-Competition
	1300	HTM-2004
	1301	IAHE

NUMBER 12

D.S. SCOTT	1303	Chasing locomotives
M.A. ROSEN and D.S. SCOTT	1307	Entropy production and exergy destruction: Part I—hierarchy of Earth's major constituencies
M.A. ROSEN and D.S. SCOTT	1315	Entropy production and exergy destruction: Part II—illustrative technologies
W. IWASAKI	1325	A consideration of power density and hydrogen production and utilization technologies
J.H. CHUN and S.K. JEON	1333	Determination of the equilibrium constant and standard, free energy of the overpotentially deposited hydrogen for the cathodic H_2 evolution reaction at the Pt–Rh alloy electrode interface using the phase-shift method
Q. HAN, K. LIU, J. CHEN and X. WEI	1345	Hydrogen evolution reaction on amorphous Ni–S–Co alloy in alkaline medium
Y.-K. OH, E.-H. SEOL, J.R. KIM and S. PARK	1353	Fermentative biohydrogen production by a new chemoheterotrophic bacterium *Citrobacter* sp. Y19
J.-J. LAY, K.-S. FAN, J.-l CHANG and C.-H. KU	1361	Influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge

B.F. HAGH	1369	Optimization of autothermal reactor for maximum hydrogen production
E. NEWSON and T.B. TRUONG	1379	Low-temperature catalytic partial oxidation of hydrocarbons (C_1–C_{10}) for hydrogen production
Y.-S. OH, H.-S. ROH, K.-W. JUN and Y.-S. BAEK	1387	A highly active catalyst, Ni/Ce–ZrO_2/θ-Al_2O_3, for on-site H_2 generation by steam methane reforming: pretreatment effect
T. MIZUNO, Y. MATSUMURA, T. NAKAJIMA and S. MISHIMA	1393	Effect of support on catalytic properties of Rh catalysts for steam reforming of 2-propanol
R. MILLS, J. HE, P. RAY, B. DHANDAPANI and X. CHEN	1401	Synthesis and characterization of a highly stable amorphous silicon hydride as the product of a catalytic helium–hydrogen plasma reaction
D.J. DAVIDSON, S.S. SAI RAMAN, M.V. LOTOTSKY and O.N. SRIVASTAVA	1425	On the computer simulation of the *P–C* isotherms of $ZrFe_2$ type hydrogen storage materials
YU.S. NECHAEV and O.K. ALEXEEVA	1433	On the nature, capability and reversibility of hydrogen storage in novel carbon nanomaterials for mobile power units
S. TOSTI	1445	Supported and laminated Pd-based metallic membranes
Announcements	1455	The HIPT-Competition
	1456	HTM-2004
	1457	Solar Hydrogen Energy
	1458	Green Energy Journal
	1459	WHE
	1467	IAHE